Host range and population structure of *Xanthomonas citri* pv. *mangiferaeindicae*

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Xanthomonas citri pv. *mangiferaeindicae* (Xcm) is a bacterium attacking two plant species of the anacardiaceae family : mango (*Mangifera indica*) and pepper tree (*Schinus terebinthifolius*), which is a pest frequently found bordering mango orchards. Cross-inoculation indicated that there is a host specialization: strains isolated on mango are weakly pathogenic when artificially inoculated on pepper tree and strains from pepper tree are weakly pathogenic on mango. A strong host specialization can lead to a sympatric speciation, therefore we wondered what are the consequences of the observed specialization onto natural populations of the pathogen. What are the evolutionary and epidemiological relationships between these populations? What tools may help to describe evolution at a very small geographic and probably time scale? Can this example help to understand host shifting in xanthomonads?

To address such questions we analysed the genetic diversity of populations of Xcm isolated on mango and pepper tree in three places. A MultiLocus Vntr Analysis (MLVA) approach was used because of its high discriminating power and because it allows to make precise evolutionary hypotheses.

Twelve minisatellite sequences were identified based on the complete genomic sequence of *X. citri* pv. *citri*. The average genetic diversity is higher for populations isolated in mango orchards than on pepper tree. Genetic differentiation indices and clonal complexes indicate that differentiation is stronger between populations isolated on different hosts than between population isolated on the same host in different places. Genetic distances between strains are low, confirming the evolutionary relatedness of the two types of strains and their classification as a single pathovar. Populations are structured as a genetic continuum, with some strains isolated from mango more closely related to some strains isolated on pepper tree than from some of the mango strains. Host specialization of *Xcm* is probably a recent event which did not (yet) result in speciation.

Keywords:
population structure, host specialization, MLVA